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New aspects of the application of nuclear magnetic resonance to the study of chemical exchange processes

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Abstract

The application of the analysis of the total line shape (ATLS) in dynamic NMR to the investigation of complex chemical exchange is examined. Theoretical aspects of this problem, illustrated in relation to the available experimental data, are described. The methodological problems of dynamic NMR are discussed: the sources of error and the role of the medium, the interpretation of the activation parameters $\Delta H^{\neq}$, $\Delta G^{\neq}$, and $\Delta S^{\neq}$, and also the new varieties of the method and their applications.

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